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Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.14/GNR/CSR-03/794e/Precast Slab/2014-15

23.03.2015

CEMENT CONCRETE CORE (PRECAST SLAB) TEST REPORT

* Customer	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. G.N. Ramesh,** No. 01, 3rd Main, Gandhi Grama, 7th Cross, Maruthi Layout, Bangalore - 560021.
* Name of work	:	Improvements drains & Re-Asphalting to roads at Defence Colony in Ward No.14, Bagalagunte, BBMP, Bangalore.
Reference	:	EE/DD/WO/299/2014-15 Dated: 16.03.2015
Techinical Reference	:	IS:516-1959 (Reaffirmed 2008), SP-24:1983.
Sample ID	:	PRECAST SLAB
Sample Received on	:	20.03.2015
Date of Testing	:	23.03.2015

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	76.00	0.377	2526.38	1.52	0.950	31.8	16.19	17.49	16.61	20.76
2	50.00	78.00	0.389	2539.95	1.56	0.955	32.2	16.37	17.68	16.89	21.11
3	50.00	80.00	0.402	2559.21	1.60	0.960	32.6	16.61	17.94	17.22	21.53

* Information is furnished by the Customer/Representative

Note:

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Job No.: CTCE/BBMP/W.No.14/GNR/CSR-03/794e/CUBE/2014-15 16.04.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	: **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	: **Mr. G.N. Ramesh,** No. 01, 3rd Main, Gandhi Grama, 7th Cross, Maruthi Layout, Bangalore - 560021.
* Name of the work	: Improvements drains & Re-Asphalting to roads at Defense Colony in Ward No.14, Bagalagunte, BBMP, Bangalore.
Reference	: EE/DD/WO/299/2014-15 Dated: 16.03.2015
* Sample ID	: Cement Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
* Grade of Concrete	: M_{15}
Compressive Strength as on	: 28^{th} day
Sample Received on	: 16.04.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	19.03.2015	16.04.2015	8.158	368.9	16.40
2	19.03.2015	16.04.2015	8.231	395.6	17.58
3	19.03.2015	16.04.2015	8.327	383.7	17.05

* Information is furnished by the Customer/Representative

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JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.14/GNR/WMM/Gradation/2014-15

18.03.2015

GRADATION FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Mr. G.N. Ramesh,**
No. 01, 3rd Main, Gandhi Grama, 7th Cross, Maruthi Layout, Bangalore - 560021.

Name of Work : Improvements drains & Re-Asphalting to roads at Defense Colony in Ward No.14, Bagalagunte, BBMP, Bangalore.

Reference : EE/DD/WO/299/2014-15 Dated: 16.03.2015

Date of Testing : 18.03.2015

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **6770**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	265	265	3.9	96.1	95-100
22.4	2310	2575	38.0	62.0	60-80
11.2	1315	3890	57.5	42.5	40-60
4.75	725	4615	68.2	31.8	25-40
2.36	855	5470	80.8	19.2	15-30
0.600	510	5980	88.3	11.7	8-22
0.075	465	6445	95.2	4.8	0-8

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Job No.: CTCE/BBMP/W.No.14/GNR/WMM/AIV/2014-15

18.03.2015

Aggregate Impact Value

IS: 2386 Part IV

Customer	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	**Mr. G.N. Ramesh,** No. 01, 3rd Main, Gandhi Grama, 7th Cross, Maruthi Layout, Bangalore - 560021.
Name of the Work	Improvements drains & Re-Asphalting to roads at Defense Colony in Ward No.14, Bagalagunte, BBMP, Bangalore.
Reference	EE/DD/WO/299/2014-15 Dated: 16.03.2015
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	18.03.2015

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	383	385	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	84	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	299	299	
4	Aggregate Impact value = percent fines	21.93	22.34	
	100* (W_2/W_1)%			**22.13**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.14/GNR/WMM/S-T/2014-15 18.03.2015

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Customer	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	**Mr. G.N. Ramesh,** No. 01, 3rd Main, Gandhi Grama, 7th Cross, Maruthi Layout, Bangalore - 560021.
Name of Work	Improvements drains & Re-Asphalting to roads at Defense Colony in Ward No.14, Bagalagunte, BBMP, Bangalore.
Reference	EE/DD/WO/299/2014-15 Dated: 16.03.2015
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	18.03.2015

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Result : Flakiness Index = **11.46%**

Elongation Index = **13.29%**

Result : Combined Flakiness & Elongation index **24.75%**

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

Note:

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Job No.: CTCE/BBMP/W.No.14/GNR/BM/Bitumen/2014-15 26.03.2015

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MACADAM MIX

AS per IRC:SP:-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. G.N. Ramesh,** No. 01, 3rd Main, Gandhi Grama, 7th Cross, Maruthi Layout, Bangalore - 560021.
NAME OF THE WORK	Improvements drains & Re-Asphalting to roads at Defense Colony in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	EE/DD/WO/299/2014-15 Dated: 16.03.2015
SAMPLE I/D	Roads at Defence Colony, Ward No 14
DATE OF TESTING	26.03.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482	482.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	18	17.50
7. Bitumen content in %	3.60	3.50
8. Average	3.55	

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Job No.: CTCE/BBMP/W.No.14/GNR/BM/Gradation/2014-15 26.03.2015

GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

As per IS2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. G.N. Ramesh,** No. 01, 3rd Main, Gandhi Grama, 7th Cross, Maruthi Layout, Bangalore - 560021.
NAME OF THE WORK	Improvements drains & Re-Asphalting to roads at Defense Colony in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	EE/DD/WO/299/2014-15 Dated: 16.03.2015
SAMPLE I/D	Roads at Defence Colony, Ward No 14
DATE OF TESTING	26.03.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	32.65	6.77	6.77	93.23	90-100
13.2	81.45	16.90	23.67	76.33	56-88
4.75	252.63	52.41	76.09	23.91	16-36
2.36	56.76	11.78	87.86	12.14	4-19
0.3	26.54	5.51	93.37	6.63	2-10
0.075	6.89	1.43	94.80	5.20	0-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0		100	100
19	33.86	7.02	7.02	92.98	90-100
13.2	83.96	17.40	24.42	75.58	56-88
4.75	259.87	53.86	78.28	21.72	16-36
2.36	52.56	10.89	89.17	10.83	4-19
0.3	26.98	5.59	94.76	5.24	2-10
0.075	8.69	1.80	96.56	3.44	0-8

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Job No.: CTCE/BBMP/W.No.14/GNR/SDBC/Bitumen/2014-15

27.03.2015

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AS per IRC : SP : 11 - 1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. G.N. Ramesh,** No. 01, 3rd Main, Gandhi Grama, 7th Cross, Maruthi Layout, Bangalore - 560021.
NAME OF THE WORK	Improvements drains & Re-Asphalting to roads at Defense Colony in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	EE/DD/WO/299/2014-15 Dated: 16.03.2015
SAMPLE I/D	Roads at Defence Colony, Ward No. 14
DATE OF TESTING	27.03.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474	475
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26.00	25.00
7. Bitumen content in %	5.20	5.00
8. Average	**5.10**	

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Job No.: CTCE/BBMP/W.No.14/GNR/SDBC/Gradation/2014-15 27.03.2015

BITUMEN GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

As per IS : 2386 and IRC : SP : 11 - 1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Mr. G.N. Ramesh,** No. 01, 3rd Main, Gandhi Grama, 7th Cross, Maruthi Layout, Bangalore - 560021.
NAME OF THE WORK	Improvements drains & Re-Asphalting to roads at Defense Colony in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	EE/DD/WO/299/2014-15 Dated: 16.03.2015
SAMPLE I/D	Roads at Defence Colony, Ward No. 14
DATE OF TESTING	27.03.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	26.37	5.56	5.56	94.44	90-100
4.75	258.74	54.59	60.15	39.85	35-51
2.36	61.64	13.00	73.15	26.85	24-39
1.18	45.78	9.66	82.81	17.19	15-30
0.3	28.23	5.96	88.77	11.23	9-19
0.075	30.58	6.45	95.22	4.78	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	28.15	5.93	5.93	94.07	90-100
4.75	266.35	56.07	62.00	38.00	35-51
2.36	54.82	11.54	73.54	26.46	24-39
1.18	31.94	6.72	80.27	19.73	15-30
0.3	27.36	5.76	86.03	13.97	9-19
0.075	36.87	7.76	93.79	6.21	3-8

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